The OAS Newsletter

A supplement to *The Ohio Journal of Science* (June 1992) for the members of the Ohio Academy of Science

A Vision for the Future of The Ohio Academy of Science

by

Lynn Edward Elfner

"We should all be concerned about the future because we'll spend the rest of our lives there." attributed to Charles F. Kettering

All organizations experience times of creation, innovation and change. Although many innovations have occurred in The Ohio Academy of Science activities since our creation in 1891, the changes and innovations initiated in 1991 and subsequently are as far reaching as any of those in the past century.

We have begun to evolve a new vision for the Academy by creating a mission statement and a set of goals for the future. Our mission—to empower curiosity, discovery and innovation—is ambitious yet achievable.

Our Centennial Celebration Commission provided a bridging mechanism enabling us to engage the political and industrial communities in a celebration of excellence of our past and to guide us into the future. The Commission's Honorary National Chairperson, Dr. Jeanette Grasselli-Brown's Centennial address, "Ohio in a Time of Change," appropriately set into context the glory of Ohio's past and the changing and challenging conditions under which we now operate. We applauded her emphasis on creativity, innovation, training and retraining; and we especially noted her caution that "If the U.S. is to compete successfully, we must be both numerate and literate, i.e. we must blend sciences and the humanities in the context of the 21st Century put forth by C.P. Snow. Our decisions, political, social and economic, must be made with consideration of the historical and environmental, political and social consequences of the actions we take."

Chaired by Dr. Eugene Apple, retired GE executive from Cleveland, the Commission fulfilled its charge set forth by the Ohio General Assembly. In addition to recognizing 25 Centennial Honorees whose combined contributions to science and society exceed 700 years, the Commission also selected pre-college and college student honorees, thereby acknowledging the importance these people will play as they become contributing members of society.

The Commission left two legacies: an organization known as The Ohio Academy of Science Foundation—a supporting mechanism for the Academy—and an exciting

Continued on page E

Inside ...

Events Calendar...

Science Innovation '92: New Techniques and Instruments In Biomedical Research
July 21-25, 1992
San Francisco, CA
For further information, contact
AAAS Meetings Office
1333 H Street, NW
Washington, DC 20005
Phone: 202-326-6450
FAX: 202-289-4021

Erosion and Sediment Control for Construction Sites
July 22-24, 1992
Kent, OH
For further information, contact
Division of Lifelong Learning
College of Continuing Studies
Kent State University
Kent, OH 44242-0001
Phone: 1-800-672-KSU2
216-672-3100

Priorities of The Ohio Academy of Science for 1992-93

by
Richard W. Janson, Ph.D., President
Lynn E. Elfner, Chief Executive Officer

To achieve its mission, goals and objectives, The Ohio Academy of Science shall concentrate all available resources on the following priorities for 1992-93:

Influence Public Policy

Involve members of the science, engineering and technology community to influence public policy issues:

- Promote and support research in science and technology.
- Retain and develop science-based industries.
- Improve environmental quality.
- Restructure and systemic change in education.

Increase and Diversify Membership

Achieve a goal of 2,000 members within the following categories:

- Pre-college and college student
- Professional
- Family
- Friend of the Academy
- Institutional
- Corporation

Restructure Governance and Administration

Continue to restructure the governance and administration of the Academy:

- Refine the positions and working relationships of CEO, Director of Administration and Assistant to the CEO in relationship to the President, Executive Committee and Governing Council.
- Fill positions of leadership on the Executive Committee and Governing Council with representatives from an ever widening constituency including industry, engineering and environmental consulting firms and science museums.
- Complete the formal establishment of The Ohio Academy of Science Foundation as a supporting organization of the Academy.
- Establish an effectively working Industrial Council and a Marketing and Communications Committee.
- Support the continuation of the Heartland Science Steering Committee.
- Update the Constitution and present it to the Governing Council for approval in 1992 and to the Academy membership for adoption in 1993.
- Continue to develop and refine the Senior Academy Council to provide visibility, continuity of leadership and stability for the sections.
- Fill all leadership positions.
- Create and fill new positions known as section executive directors.
- Dissolve or merge inactive sections.
- Create new sections based on market assessment.
- Assist the leadership of each section to develop long range plans.

Provide for Program Continuity and Development

Continue, and refine effective programs including:

- The Annual Meeting Program at Youngstown State University
- *The Ohio Journal of Science* and *The OAS Newsletter*
- The Ohio Junior Academy of Science
- Program and Proposal Development
- Long Range Planning

Editor: Lee A. Meserve

Assistant Editors:
Katherine MacDonald
Ardella Pierce

Design and Layout:
Katherine MacDonald

Contributions:
Send to:
Lee A. Meserve
Dept. of Biological Sciences
Bowling Green State Univ.
Bowling Green, OH 43403

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Eloise—Remembered

by Relda Niederhofer

OJS Editor's Note: *The following was written by Relda Niederhofer, Assistant Professor Emeritus, Firelands College, BGSU. The Editor, who came to BGSU in 1973 to take the position vacated by the retirement of Ms. Eloise Whitwer, found this memoir of great interest. It is included in this newsletter with the expectation that it will also interest other OAS members who were Ms. Whitwer's colleagues and intellectual progeny.*

One of the most colorful editors of *The Ohio Academy of Science News* (1968 to 1971) was Miss E. Eloise Whitwer. She was better known to her friends as just "Eloise." She became a dedicated member of the OAS serving as a judge for the District Science Day her first year (1946) at Bowling Green State University. She worked with her colleague Gerry Acker in the Junior Academy of Science and soon became an active member of the Northwest District Committee. In 1957 she became University Councilwoman for the district, progressing to the Director of the District Science Day from 1966 to 1971. Eloise was a reviewer of publications for the *Journal* of The Ohio Academy of Science in 1952 and then editor of *The OAS News*. She was honored for her 25 years of service with the OAS by being elected a fellow in 1963, and was awarded an honorary life membership in 1972.

Eloise resigned her editorship in 1971 in preparation for her retirement the following year. In 1972 Bowling Green State University tried to honor her at retirement by bestowing the rank of Professor Emeritus on her, but she requested (no, demanded) that she not receive any fanfare, farewells, pins, watches, plaques, news stories, or anything else anyone might conjure up that pertained to her retirement. She was a very private person and wanted to remain as such. Her teaching career spanned 41 years, from a simple beginning in a Nebraska one-room school to her final teaching position as an Associate Professor of Biology.

The life of travel she longed for in her retirement included one trip to Aruba at the end of summer school in 1972, but the trip she had planned to the famous Darwin Galapagos Islands the next summer didn't materialize. Her seven months of retirement were terminated suddenly by a massive heart attack on 16 February 1973. There was no funeral or interment to mark her passing. She hated goodbyes right up to her death. In keeping with her devotion to human anatomy and physiology, Eloise had willed her body to the Medical College of Ohio. Her good friend Gerry Acker organized a memorial service in her honor at Prout Chapel on the BGSU campus.

Eloise was born in Tilden, NE, on 25 September 1902, the only child of Richard and Gertrude Whitwer. She received her Bachelor of Arts degree from the Baptist College in Grand Island, NE, in 1923, and a Master of Arts degree from the University of Nebraska in 1926.

Undoubtedly a desire to travel and teach abroad prompted Eloise to become a missionary. On 10 January 1930 she was appointed to the Women's American Baptist Foreign Mission Society (WABFMS). She spent a summer in the Biblical Seminary in New York, and in September 1930 she sailed for Rangoon, Burma, to become a biology teacher at Judson College.

The WABFMS report of her service indicates that she did such excellent work at Judson College as a biology teacher that she was asked to serve as Head of the Department of Biology during the furlough of Chairman Gates. Subsequently, through a contact at an embassy party, she was encouraged to join the staff at the University of Rangoon, which she did. Her missionary service report also states that she so thoroughly won the respect of all her associates in the university college that she was chosen as head of the Biology Department during a similar leave of absence for Chairman Meggitt. This was unusual recognition for any American in Rangoon, and especially remarkable for a woman.

She taught biology to Burmese, Indian, Eurasian, Chinese, and a few American pre-medical students at the University of Rangoon. She lived on the university estate and took advantage of the three dining rooms featuring Burmese, Anglo-Indian, and European food. She maintained her own car so she traveled extensively. There were biology field trips to the Bay of Bengal and Mandalay to collect marine specimens for laboratories.

The bombing of Pearl Harbor, 7 December 1941, brought the United States into World War II. Eloise remained on the University of Rangoon staff until the Japanese invasion was imminent. The Japanese had seized the major Chinese coastal ports, and by January 1942 they were threatening the southern supply route through Rangoon and up the Burma Road to China. The Burma Road, a 700-mile winding life line for moving goods and ammunition over the Himalaya Mountains into the interior of China, served as an escape route for Americans and British in Rangoon. Eloise fled Rangoon via the Burma Road driving a British command car. She joined Dr. Gordon Seagrave, the "Burma Surgeon," in Namkam

Continued on page D

Eloise—Remembered

Continued from page C

and volunteered to drive one of his six ambulances on a run between Namkam and the Chinese border up the Burma Road. This act required much personal courage because the Japanese bombed the area most moonlit nights, destroying parts of the road and bridges. Eloise escaped Burma just before Rangoon fell in March 1942. She joined General Merrill's Marauders and moved on to China.

Eloise's teaching career had to be postponed during the Second World War so that she could become a civilian chief of the cryptographic section in General Claire Chennault's Kunming, China headquarters of the American Volunteer Group (AVG) and the Air Task Force (CATF) from March 1942 to September 1943. General Chennault had been in China since 1937 advising Generalissimo and Madam Chiang Kai-shek in the defense of China against the Japanese. General Chennault's pilots, the famous Flying Tigers, kept the Burma Road open so China could maintain a supply route with the outside world. General Chennault's account of the fighting indicated that, "For a year after Pearl Harbor, the Flying Tigers were the only Allied air force in Asia opposing the Japanese." In September 1943 Eloise became secretary and stenographer to General Hull, Chief of Staff of the 14th Air Force.

In July 1944 Major General Claire Chennault awarded the Emblem of Meritorious Civilian Service to Eloise and to Thomas G. Trumble, his secretary and liaison representative, for their outstanding work at the 14th Air Force Command. These were the first civilian awards made in China. Both recipients also shared the distinction of being from Nebraska.

In the early part of the war General Chennault had been seriously understaffed and needed help in all areas, but by 1945 the war was coming to a close and positions that had been filled by missionaries could now be staffed by Army personnel. On 14 March 1945 Eloise returned to the United States where she resigned from the WABFMS in April 1945. For several months she served as a China adviser in the Foreign Economic Administration in Washington, DC.

In the fall of 1945 she resumed her teaching career by taking a biology position at Meredith College in Raleigh, NC, where she remained for a year and a summer. In the fall of 1946 she accepted a teaching assignment as an Instructor of Biology at Bowling Green State University. As the discharged veterans were returning to the college classrooms in large numbers, Bowling Green State University expanded from 1,500 students in 1945 to 3,000 in the fall of 1946. Students and faculty were housed in cramped temporary quarters. Nearly 200 students lived in the men's gym; other students were housed in the recreation hall of the administration building and in the women's building.

Eloise made a home for herself in a remodeled garage on University Lane. The comfortable apartment had a loft bedroom built into the gable which was only accessible by a vertical ladder. On the banister of the loft she proudly hung a Flying Tiger flag, with an original insignia depicting a winged tiger flying through a large "V" for victory.

Occasionally Eloise would bring her pet dachshund, Katrynka, to biology class. Katrynka had a special chair in the front of the room where she would sleep while the class was being conducted. If Katrynka got restless, one of the students would volunteer to take her for a short walk.

Many former students will remember Eloise for her generous nature. Whether she listened to problems, cared for a sick student, or cooked a gourmet meal of Burmese curry dishes, she made the homesick students feel a little less lonely. In her early years at Bowling Green, students whom she had befriended thought of her as their "campus mom"; as she aged, some students were privileged to refer to her as their "academic grandmother."

A tradition that Eloise brought back with her from China was that of being a Godmother to many students, in the Chinese sense, i.e., to remember their birthday with gifts and take a benevolent interest in them. Eloise never disclosed her birth date, even the University records were blank, yet she kept a record of birthdays to send her friends a card to honor their special day.

Eloise was a member of the biology staff for 26 years, teaching freshman introductory classes, zoogeography, and anatomy and physiology. She took great pride in her honors sections. Anyone who ever had Miss Whitwer as an instructor would agree she didn't "give" grades. Her classes required hard work. You earned your grade. She would spend hours helping students understand difficult material, but she didn't compromise her position by giving favors.

Although Eloise did not actively pursue a doctorate degree, she did take graduate courses at The Ohio State University and New York University. Eloise spent many summers at the Ohio State University Frantz T. Stone Laboratory at Put-in-Bay, OH, doing research. The lake laboratory provided an ideal setting for studies of fresh water biology. Her research at the islands resulted in two publications: "Efficiency of finely divided vs. tape-like aquatic plant leaves," *Ecology* 36 (1955): 511-512; and "Maximal photosynthetic rates

Continued on page F

A New Vision for the Future

Continued from page A

project called Heartland Science—Ohio's Heritage of Discovery and Innovation. It is my highest hope that the Heartland Science project will capture the imagination and curiosity of all Ohioans and that we will fulfill what we said for many years—that anyone interested in science can find a niche in the Academy.

The Academy's Executive Committee began a process to restructure the governance and administration of the Academy by renaming and redefining the role of the chief staff person to that of Chief Executive Officer. The principal role of the CEO is that of a change agent—to "lead in fostering science, scientific activities and endeavors, and scientific education in Ohio." Concurrently the position of Assistant Treasurer was renamed Director of Administration and a new position of Assistant to the CEO was proposed.

Responding to the overwhelming success of the Junior Academy and its administrative council and reflecting on the needs of technical section members, the Executive Committee moved to create the position of Senior Academy Director and to establish authority for a Senior Academy Council. The primary purpose of the Senior Academy Council is to support and promote the activities of the Academy other than those provided by the Junior Academy. The Senior Academy Council is expected to provide visibility, continuity and stability for the sections.

Although yet to be realized fully, a pervasive understanding is evolving within the leadership of the Academy that to be successful we must be more market oriented. In simple terms we must assess the needs of the science, education and technology community, structure activities, programs and publications to meet these needs, and communicate the value to be received by those who should be willing to support such products and services.

For the first time in our history, the Executive Committee has begun to assume principal responsibility for membership development by creating a membership committee. New strategies, including the development of site or employment based membership coordinators has resulted in the commitment of nearly 60 persons to expand and diversify the Academy membership.

The Academy's relations with industry in Ohio have always been favorable. Except for the Junior Academy and other science education related programs, however, no industry-academy relations programs exist. This will change with the creation of the Industrial Council which is expected to facilitate linkages among government/industry/education and the Academy, to facilitate continuing science and technology education, and to address the needs of industrial scientists.

Two significant innovations were initiated within the context of *The Ohio Journal of Science*. Issues of *The OAS Newsletter* were included in the June and December 1991 issues of the *Journal*. In keeping with his commitment to make the *Journal* worthwhile reading for the entire membership, the Editor wholeheartedly endorsed the concept of publishing Critical Perspectives in Pure and Applied Natural, Physical, and Social Sciences.

Although many of our activities will continue—conducting The Annual Meeting, publishing *The Ohio Journal of Science*, and empowering students and teachers through the Ohio Junior Academy of Science—we must work both to shape changes and to respond to the political, social, and economic changes occurring worldwide which are affecting all organizations.

In the introduction to their recent book *Changing the Essence* (1992, Jossey-Bass Publishers), authors Richard Beckhard and Wendy Pritchard make this significant observation regarding forces requiring fundamental change:

"The world in which we live and will live, and the environment in which organizations will operate, are without precedent. Although the elements are the same, the pace and complexity of changes to new forms, ways of living, and values are of an order of magnitude never before experienced. Changes in the political landscape and new relationships between the First World and the Third World are redefining the marketplace, the means of production, and the location of human, financial, and technical resources.

The explosion of technology in communications and information have indeed created one world in which transactions take a microsecond, and news travels as fast as it can be reported. Worldwide changes in social values, such as concern for the environment, the role of women in society, and the role of wealth-producing organizations, all define the environment in which organizations function.

This environment is making unprecedented demands on organizational leaders, who have the task and responsibility of deter-

Continued on page F

Eloise—Remembered

Continued from page D

in nature" (J. E. Verduin and B. C. Cowell, co-authors), *Science* 130 (1959): 268-269.

An unfortunate accident in March 1965 resulted in Eloise suffering a broken leg. She slipped on the icy sidewalk in front of Moseley Hall. This accident only slowed her down for a short time. When the doctor told her she would have to stay in the hospital for several weeks, her anxiety to get back in the classroom brought out her unique humor: "I fell on my leg not my head, I'm still competent to teach!" She did get back in the classroom with the aid of a cane. Only after a hip replacement operation did she finally walk without the aid of her cane.

Eloise held many social positions on campus as adviser for Beta Phi Chapter of Alpha Chi Omega (1947-54), University Social Committee, Honors Day Committee, Faculty Adviser to Campus Chest Drive (1952-53), and Group Leader Freshman Orientation.

Eloise was very proud to have been accepted as a charter member of the 14th Air Force Association. She served as a member for the Board of Governors and on a number of other committees. She attended conventions, parties, and get-togethers as often as she could. She was held in such high esteem by her wartime friends that a contingent of Flying Tigers attended and took part in her memorial service. Her obituary in *Chennault's Flying Tigers: A Commemorative History of the American Volunteer Group China Air Task Force 14th Air Force: 1941-1945* expressed their love for her: "She looked like a little white-haired school teacher with a bird-like manner, twinkly eyes and a warm and friendly disposition. And that's exactly what she was, and she was beloved of her friends. But behind those twinkly eyes was one of the most adventurous spirits that any of us may ever meet."

The author thanks Ronald L. Stuckey, Ph.D., John W. Chun, Ph.D., and William W. Currie for their assistance in preparing this memoir.

A Vision for the Future

Continued from page E

mining both the functioning and the future of their organizations. This "white water" turbulence is forcing most leaders to examine the very essence of their organizations—their basic purposes, their identities, and their relationships with customers, competitors, and suppliers."

External factors continue to influence the Academy; many, such as increased requirements for accounting and increasingly complex auditing standards, have served to reduce our productivity. As a small, not-for-profit business, the Academy must constantly weigh the administrative costs of receipt of external funds against the benefits received. Especially onerous are Federal and State agency grant compliance guidelines. It is virtually impossible for the Academy to be completely aware of the multitude of rules and regulations imposed by Congress, the Federal administration, the U.S. Postal Service, State agencies and The Ohio General Assembly.

On the positive side, information technologies—especially the computer, the FAX machine and CD-ROM storage and retrieval technologies, have improved key aspects of our productivity and have enabled us to become part of the global village of information exchange.

Frequently I am asked, "Where is the Academy?" Having moved in December 1991, the Academy's central office now is at 1500 West Third Avenue, Suite 223, Columbus, OH 43212-2817. However, we also maintain volunteer offices at 16 colleges and universities for our district science days, a State Science Day office at Ohio Wesleyan University, an office for *The Ohio Journal of Science* at Bowling Green State University and for a few months each year our local annual meeting host's office serves as a vital work site for annual meeting planning.

Our introspection has enabled us to move into our second century with direction, conviction, speed, and a renewed sense of purpose. Empowering curiosity, discovery and innovation is a people-focused mission. By refining and improving our current activities and by developing new ones, based on the needs of people, we will continue to encourage and assure the discovery, understanding, dissemination and practice of science, mathematics, engineering and related disciplines in public and private schools, universities and colleges, museums, mines, farms, factories and service establishments of Ohio. And we will continue to represent the interests of all individuals, corporations, and institutions that have a vital interest in science, science education, and the application of science and engineering through technology.

The Ohio Academy of Science
1500 West Third Avenue
Suite 223
Columbus, OH 43212-2817
Phone or FAX (614) 488-2228

Empowering curiosity, discovery and innovation for the 21st Century.

How We Know About Our World: Some Important Books of Historical Interest

by Emanuel D. Rudolph

Most people today, if they remember him at all, think of Claudius Ptolemy as the expositor of the earth-centered universe that was replaced in the 16th century by the sun-centered system of Copernicus. During the Hellenistic Period when Ptolemy lived, from about 90 to 168 A.D., he was important as a mathematician and geographer, the latter resulted in his guide to the geography of the then known parts of Europe, Asia, and Africa. Dover Publications has reprinted in a large-sized paperback an English translation of Ptolemy's Geography published in an edition of only 250 copies in 1932 (Ptolemy, Claudius, *The Geography*. Translated and edited by Edward Luther Stevenson, with an introduction by Prof. Joseph Fischer, S.J., New York: Dover Publications, 1991.). This reprint is wonderful for those who question what the ancients knew about places in their world. The text explains what Ptolemy thought geography was, and how he determined the positions on the Earth's sphere, particularly more accurately than others especially those determined on a map prepared by Marinus the Tyrian. In this edition, in addition to providing the latitudes and longitudes of more than 8,000 localities, maps from manuscript editions of Ptolemy are included. This reasonably priced ($19.95) work will be a revelation to many of just how knowledgeable Ptolemy and his contemporaries were about geography.

Other recent Dover reprints of books important in the history of scientific understanding include: Maxwell, James Clerk, *Matter and Motion* , Notes and Appendices by Sir Joseph Larmor, 1991 (reprint of 1952 edition), paperback, $6.95; Planck, Max, *The Theory of Heat Radiation*, authorized translation by Morton Masius, 1991 (reprint of 1914 edition earlier reprinted by Dover in 1959), paperback, $7.95; and Ronchi, Vasco, *Optics, the Science of Vision*, translated from Italian and revised by Edward Rosen, 1991 (reprint of 1957 edition), paperback, $9.95.

Ohio University Appointment Announced

Ohio University announces the appointment of Professor Alexander V. Arhangelskii of Moscow State University to the position of professor of mathematics, beginning in the academic year 1992-93. Professor Arhangelskii will be in residence on the Athens campus during the winter and spring quarters each year. He will also retain his affiliation with Moscow State University.

Professor Arhangelskii is generally regarded as one of the leading set-theoretical topologists in the world. He is the author of more than 145 papers and 5 books and has had 24 Ph.D. students.

Student Research Grant Proposal Results Announced

The Student Research Grants Committee is comprised of Carl Bohn, Chairperson, C. Lawrence Cooper, Robert E. Madaffer, Rebecca A. Spore, and Amy M. Elfner. A total amount of $5,299.46 was requested in proposals received from ten students, however, only five students were awarded grants totalling $1,135.00. Support of these grants is provided in part by a grant to The Ohio Academy of Science from the American Association for the Advancement of Science.

The following are the results of the Student Research Grants Committee:

- Sehjung Hah, Upper Arlington, $225 for "Local and Distal Host Responses to Pseudomonas syringae pv. glycinea"
- Michelle D. Stephens, Bellefontaine, $260 for "The Production of cDNA Library of the Midgut Epithelial Cells of *Manduca sexta* in Order to Clone the Potassium Channel Gene"
- Mark W. Stuart, West Liberty, $250 for "The Herbicide Resistance Transformation of Nitrogen-fixing Bacteria"
- Emily J. Roberts, Rushsylvania, $200 for "Verification of the Construct and Expression in Yeast of the Plasmid pBL 100"
- Dawn Marie Pauli, Barberton, $200 for "Longevity Increase of Spontaneously Diabetic Mice Treated with Xenogenic Anti-Ig G"

U.S. Expenditures for Research and Development Declining

Total U.S. research and development (R&D) expenditures continue to exceed those of America's closest industrial competitors. However, according to the recently released National Science Board (NSB) report, *Science and Engineering Indicators-1991*, national investment in R&D slowed during the second half of the last decade, and began to decline slightly in constant dollars after 1989.

The *Science and Engineering Indicators* report, required by Congressional legislation, is submitted by the National Science Board to the President, who in turn provides it to the Congress. This volume is the tenth in the biennial series begun in 1972 by the NSB, the policymaking body of the National Science Foundation (NSF).

Science and Engineering Indicators is designed to provide decisionmakers in government, industry, and the academic world with a broad base of data about U.S. science and technology, including information on research and development, education, employment, expenditures, and public attitudes.

The Federal government is estimated to have reduced its inflation-adjusted R&D expenditures from 1988 to 1991, reflecting global political and economic changes. Current estimates for development expenditures exhibit the sharpest downturn—a negative trend in constant dollars since 1988, according to *Science and Engineering Innovations*. The estimated trend in applied research, too, has been negative since 1989.

The rate at which American companies are spending money on R&D has also leveled off, says the report. The average annual increase in total U.S. R&D expenditures between 1985 and 1991 (in constant dollars) was 1.2 percent, compared with an annual growth rate of 6.9 percent from 1980 to 1985. The most recent estimates on change from 1989 to 1991 also show declining R&D expenditures.

Internationally, total U.S. R&D expenditures continue to exceed those of its four closest industrial competitors combined, despite the fact that two of these countries (West Germany and Japan) outpace the U.S. in terms of R&D expenditures as a percentage of gross national product (GNP). As of 1989, these four countries together (the two named above, plus the United Kingdom and France) spent 12 percent more than the U.S. on total non-defense-related R&D activities.

Although academic R&D continued to grow during the late 1980s, it was at a slower rate than during the first half of the decade. Major investments were made during the 1980s in research instrumentation (with support coming primarily from Federal agencies) and the construction and refurbishment of research facilities (supported primarily by the institutions themselves). However, financial problems loom for research universities as the recession hits both state budgets and the various sources of income for private institutions, and as pressures mount for lower indirect cost reimbursement rates on Federal research grants and contracts.

Copies of this report, *Science and Engineering Indicators—1991*, are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, stock number 038-000-00587-1 for $29.00.

New AAAS President-Elect Announced

Dr. Eloise Clark, Vice President for Academic Affairs at Bowling Green State University, has been voted president-elect of the American Association for the Advancement of Science, one of the country's most prestigious and long-standing organizations of scientists. Dr. Clark was chosen on the basis of her research, professional accomplishments and her activities in AAAS.

Dr. Clark is a long-time member of AAAS and was elected by a mail-in vote of the organization's members who number in excess of 133,000. As president-elect, Dr. Clark will chair the committee on council affairs, sit on the executive committee of the board of directors and have a number of roles at the annual meetings. In 1993 she will become president and in 1994 she will chair the board of directors.

Dr. Clark has been a researcher and teacher at Columbia University and has held various administrative positions at the National Science Foundation. She came to Bowling Green as Vice President for Academic Affairs and Professor of Biological Sciences in 1983.